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(54) Comprehensive Apparatus for Training and Strengthening with One's Own Strength

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Specification

1. Title of Invention

Comprehensive Apparatus for Training and Strengthening with One's Own Strength

2. Claims

A comprehensive apparatus for training and strengthening with one's own strength, comprising a training and strengthening apparatus wherein a plurality of expanders 4 and 4 is suspension-mounted so as to be severally and freely attachable to and detachable from a bed 9 made in an integrated form which combines a longitudinal type and a lateral type, bracket plates 8 and 14 are secured above and below the upper parts of legs 1, pulleys 6 and 10 are severally mounted on shafts, having various fastening hardware for mounting auxiliary pulleys 11 on shafts to the upper bracket plate 14, through which connecting cords are passed, and for attaching bands to the ends of intervening cords; wherein equipment of the same scheme is provided to the bed both longitudinally and laterally, the longitudinal and lateral expanders can be activated separately, twistors and ankle training devices or the like having different mechanisms are severally deployed at the left and right feet of the lateral type bed, [wherewith], by their being individually and sequentially used, the entire body can be trained and strengthened.

3. Detailed Description of Invention

This invention relates to a comprehensive training apparatus which employs the extension-contraction forces of lateral expanders, wherein the ends at one end of publicly known expanders are suspended to legs below the forward end bed of a cross-shaped bed made in an integrated form combining a longitudinal type and a lateral type, to the other ends of which the ends at one end of connecting cords are fastened, connecting cords are passed, via pulleys provided at the legs on the back end of the cross-shaped bed, between pulleys provided at the edge of the bed at the end immediately above that, there being hardware for hanging the bed at the end of the cords, the ends at one end of publicly known expanders are severally suspended to the lower legs of bed extensions on both side surfaces of the bed, to the other ends of which expanders are severally fastened connecting cords, the other ends of which cords are [passed? (*direct object left hanging with no predicate in original*)], one pulley is provided, between two pulleys provided at the edges of the upper ends of the respective extensions of the bed 9 and below two pulleys at the other extension thereof, so that the vertical expanders of the several connecting cords do not rub across each other, hardware for suspending belts is fastened to the cord ends through these [pulleys], to which hardware various belts for the legs, hands, and neck and the like are fastened, that is, to a comprehensive apparatus for training and strengthening with one's own strength, that can be used for training and strengthening the muscles, joints, and tendons and the like of the entire body, and for helping [to improve] the appearance of the entire body, that combines twistors, at the lower legs of the lateral type bed that is the bed extensions, for twisting the hips and training the muscles and joints and the like from the hips down, with the ankle training and strengthening apparatus of Utility Model Application No. S53-179130/1978, already

submitted, which is for training the joints, muscles, and tendons and the like of the ankles. That being the case, the configuration of the present invention, together with embodiment modes therefor, are now described in detail with reference to the drawings.

A cross-shaped base is formed by connecting and assembling pipe legs 1 and pipe crossbars 2, a crossbar 3 is provided at the position of the height of the legs on the front side, to this crossbar are attached two sets of hooks 5, so as to be freely detachable, at a suitable interval, with publicly known expanders 4 of [illegible; possibly *equal*] length, to the legs (1) on the back side of the bed are attached, at a suitable height, a bracket plate 8 to which are severally secured by pins 7 two pulleys 6, on the left and right thereof, at the same interval as the hooks [5]. Provision is made so that, at the perpendicularly upper parts of these respective pulleys 6 and 6, when the connecting cord 12 operates with two pulleys, namely a main pulley 10 and an auxiliary pulley 11, directly below the bed 9, that cord 12 will not be dislocated from the sheave channel 10' of the pulley 10. To left and right brackets, respectively, (a) bracket plate(s) 14 secured by pins 13 is/are affixed so that the outer circumferential parts of the two pulleys 10 and 11 become aligned, a rectangular bed 9, having suitable cutouts at the same interval as the interval between those left and right pulleys 10 and 10, is mounted on the base, to the two hooks 5 are suspended the ends at one end of the respective expanders 4, to the other ends of which are fastened the connecting cord 12 of a suitable length. The other end of this cord 12 is passed between the main pulley 10 and the auxiliary pulley 11 via the pulley 6, to that end is fastened band attaching hardware 15, to this hardware are attached various types of bands, whereupon the longitudinally oriented training unit is thereby configured. To the legs 1' of the extension on the left side of the extension base legs made to protrude at suitable positions on the two side surfaces, a crossbar 18, to the middle of which a hook 17 for suspending an expander 16 at a suitable position is secured, is connected and secured so that the two sets of expanders 4 of the longitudinally oriented training unit and a connecting cord 27 do not rub across each other. Between the right-side legs 1", a bracket plate 21 to which a pulley 19 is secured by pins [illegible], is affixed. At the perpendicularly upper part of this pulley 19, a bracket plate 24 to which a main pulley 22 and an auxiliary pulley 23 are conjoined is secured. To a hook 25 on the left-side leg, one end of an expander 26 is suspended. The other end thereof fastens to a connecting cord 27, and passes between the sheave channels 22' of the main pulley 22 and auxiliary pulley 23 via the pulley 19. Band attachment hardware 28 is attached, and, above that, a suitably cut-out extension plate 29 is affixed on the base on the extension side to form the left extension. In the left extension, a crossbar [illegible], to the middle whereof a hook 25 is secured, is attached, at a suitable position, to a left extension base pipe leg 1". A bracket 32 to which a main pulley 30 and an auxiliary pulley 31 are conjoined is attached to a left extension leg 1, the expander 26 is suspended from the hook 25, a connecting cord 33 is fastened, passed between the sheave channels 30' of the two [pulleys namely] the main pulley 30 and the auxiliary pulley 31, band attachment hardware 34 is fastened [thereto], and the extension plate 35 is mounted on the base on the extension side, whereupon the laterally oriented training unit is configured. To a lower side crossbar 2' of the left rear extension base 1", two L-shaped pipes 36 are connected, horizontally and in parallel, at a suitable interval, by a lateral reinforcing rod 37. Onto these L-shaped pipes 36, a base plate 39, having an upright bearing 38 in the center thereof, is securely mounted. On the upper side of that bearing, a thrust bearing 40 is mated, and on the

lower side thereof, a radial bearing 41 is mated. To this, the center shaft 43 of a revolving disc platform 42 is mated, and a nut 44 is screwed onto the end of the shaft 43 from the bottom so that [the disc platform 42] can turn freely. At a suitable position on upper and lower crossbars 2 and 2' on the right front extension base leg(s) 1', a T-shaped handle lever 46 having grip pipe 45 T-shaped handles mated thereto on the left and right is securely erected. Thus the twist unit is configured. To a lower crossbar on the left rear extension base leg(s) 1, meanwhile, two L-shaped pipes 47 are secured, in like manner as the left-side twist unit, connected by a pipe lateral reinforcing rod 48. Above the parallel L-shaped pipes 47, a base plate 49 is secured. Connecting belts 51 are secured along the left and right edges, respectively, on the front sides of the upper surfaces of a pair of foot holders 50, while heel stopping brackets are erected at the rear thereof, and foot securing belts 53 are installed in the middle parts so as to be freely detachable. Long channels (54) are provided, running from front to back, in reinforcing plates 54 that run down the center from front to back on the bottoms of the foot holders 50. Above these channels, slots (54)' are provided, in suitable numbers, in a comb pattern, to form shaft receptacles. To these channels are fixed brackets 55 having shafts at a height corresponding thereto [i.e. to the shaft receptacles]. Support shafts 56 are inserted into holes that penetrate through the upper parts of the brackets. [The long channels (54)] are mounted loosely so that they can move, freely sliding or turning, over the support shafts 56. At suitable positions on front parts of the brackets 55, stoppers 57 are secured for limiting the movement of the toes. Above the base plates 49, left and right foot holders are mounted and secured, respectively aligned in parallel at a suitable interval. Stoppers 58 for limiting the downward movement at the rear of the foot holders are respectively secured on the base plates 49, and a T-shaped handle lever 60 having grip pipes 59 in like manner as the twist unit are erected. Thus the ankle training and strengthening unit is configured. With these training units, namely the two training units that are longitudinally and laterally oriented, the twist unit[, and] the ankle training unit, this is a comprehensive training and strengthening apparatus wherewith the entire body can be trained and strengthened.

Embodiments

To describe how the longitudinally oriented training unit is used, the trainee installs the two ankle bands 61, secures the bands respectively to the band attachment hardware, and begins training. The ways in which training is done with the mechanisms in the comprehensive apparatus of the present invention are now described.

In training exercise A, [the trainee] lies down on his or her back on the bed, grips the head of the bed with both hands, and repeats the exercise of raising and lowering both legs up and down, either simultaneously or alternately. Thereby, training and strengthening is done that imparts muscle strength and endurance in the lower abdominal region and legs, wherefore flab is removed from the lower abdominal region and legs, and aging of legs is prevented.

In training exercise B, [with the trainee] lying on his or her back, both hands are locked behind the head while both feet are kept on the bed, the hips are stretched, and the body is slightly tilted to the rear. In this condition, the hip and back muscles are trained, the waist is made slimmer, and the spine is stretched.

In training exercise C, [with the trainee] on his or her back and the neck and shoulders are raised, or the upper body is raised, while bringing the elbows close together, with the hands held under the head, thereby training the hips, shoulders, and abdominal region.

In training exercise D, the position of the ankle bands is set forward, the band attachment hardware is secured, and, [with the trainee] on all fours, one leg is raised backward. By kicking back with the opposite leg also, the legs, hips, and buttocks are trained.

In training exercise E, [the trainee] lies on his or her stomach in a crawling position and repeatedly bends both knees and ankles, thereby training the muscles at the back of the thighs. This tones the muscles at the back of the thighs.

In training exercise F, a neck band 63 having an elongation cord 62 is secured to both the left and right band attachment hardware, the body is bent forward, the band is placed behind the neck, and the hips are stretched. By repeating this exercise, the neck, back, and abdominal muscles can be trained, and stoop can be prevented.

In training exercise G, [with the trainee] on his or her back and the head positioned on the pulley end [of the bed], two wrist bands 64 are attached to the band attachment hardware, and the arms are stretched upward and repeatedly raised upward toward the front, thereby training the arm, bosom, and shoulders, making the arms and shoulders slimmer, and making the bosom fuller.

Next, with the laterally oriented training unit, the ankle bands are secured on the left and right[.]

In training exercise H, [with the trainee] seated on the bed, the legs are spread apart and secured to the band attachment hardware, and the motion of closing and opening the legs is repeated. Thereby the muscles of the buttocks and inner thighs can be trained.

In training exercise I, [with the trainee] lying on his or her back, both arms spread open, the two wrist bands secured to the band attachment hardware, and the arms stretched out, a pulling-up movement toward the front is repeated, thereby training the shoulders, arms, and bosom to condition the bosom and arms.

In training exercise J, by bending the arms from the elbows and pulling up toward the front with the forearms only, the muscles of the upper arms are trained.

In training exercise K, [the trainee] stands on the disc platform, grasps the grip pipes of the T-shaped handle lever, and twists [from] the waist, thereby improving the functioning of the inner organs, training the legs and hips, and toning the muscles around the stomach.

In training exercise L, after securing the feet in the foot holders, [the trainee] grasps the grip pipes of the T-shaped handle lever, adjusts his or her posture, repeats a heel raising and lowering exercise involving lowering the toes or lowering the heels so as to stand on the toes, either simultaneously [with both feet] or alternately left and right, in a seesaw motion, about the center of the shaft receptacles. This exercise trains the joints,

muscles, and tendons and the like of the ankles and tones the [muscles of] the ankles and calves.

In this manner, with a single training apparatus, the muscles, joints, and tendons and the like of the parts of the entire body, such as the arms, legs, abdomen, hips, back, shoulders, and neck, can be trained from various directions, while also exhibiting a whole-body beautifying effect. Hence the training loads on the muscles, joints, and tendons and the like of the trainee can be adjusted easily, even for a female. Also, because the expanders used for weight loading can be freely attached and detached, conventional use is also possible, and [the apparatus] exhibits enormous benefits.

4. Brief Description of Drawings

Fig. 1 is a plan of the comprehensive training apparatus of the present invention, Fig. 2 is a front view thereof, Fig. 3 is a right side view thereof, Fig. 4 is a left side view thereof. Fig. 5 is an enlarged view of the twist unit in the right side view, Fig. 6 is a diagonal view of the ankle training unit in the left side view, and Fig. 7 to 14 are diagrams of body positions during training.

- 17 ---- hook
- 18 ---- crossbar
- 19 ---- pulley
- 20 ---- pin
- 21 ---- bracket
- 22 ---- main pulley
- 22' --- sheave channel
- 23 ---- auxiliary pulley
- 24 ---- lateral bracket plate
- 25 ---- hook
- 26 ---- lateral expander
- 27 ---- cord
- 28 ---- band attachment hardware
- 29 ---- extension plate
- 30 ---- main pulley
- 30' --- sheave channel
- 31 ---- auxiliary pulley
- 32 ---- bracket plate
- 33 ---- cord
- 34 ---- band attachment hardware
- 35 ---- extension plate

36 ---- L-shaped pipe
37 ---- lateral reinforcing rod
38 ---- upright bearing
39 ---- base plate
40 ---- thrust bearing
41 ---- radial bearing
42 ---- revolving disc platform
43 ---- center shaft
44 ---- nut
45 ---- grip pipe
46 ---- T-shaped handle lever
47 ---- L-shaped pipe
48 ---- lateral reinforcing rod
49 ---- base plate
50 ---- foot holder
51 ---- connecting belt
52 ---- heel stopping bracket
53 ---- foot securing belt
54 ---- reinforcing plate
(54) ---long channel
(54)' -- slot
55 ---- bracket
56 ---- pin
57 ---- stopper
58 ---- stopper
59 ---- grip pipe
60 ---- T-shaped handle lever
61 ---- ankle band
62 ---- elongation cord
63 ---- neck band
64 ---- wrist band

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Fig. 1

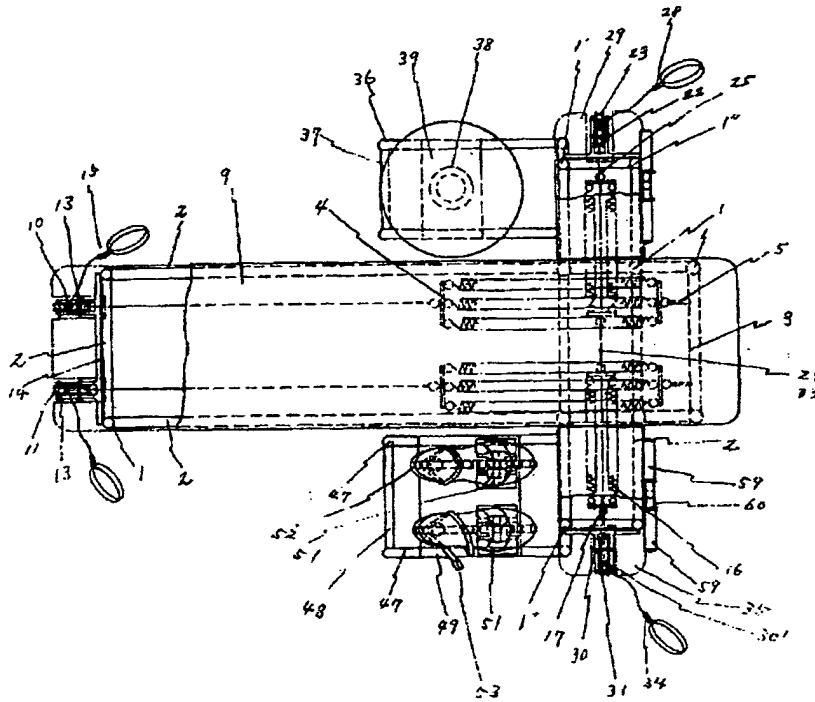


Fig. 2

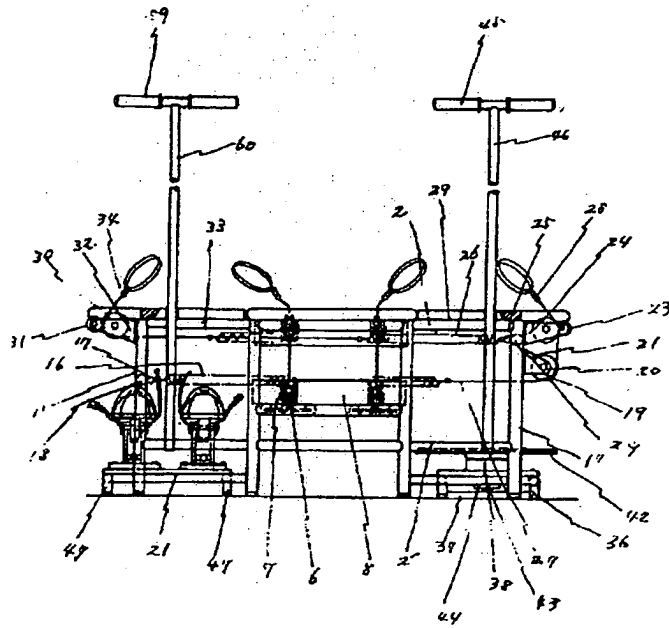


Fig. 3

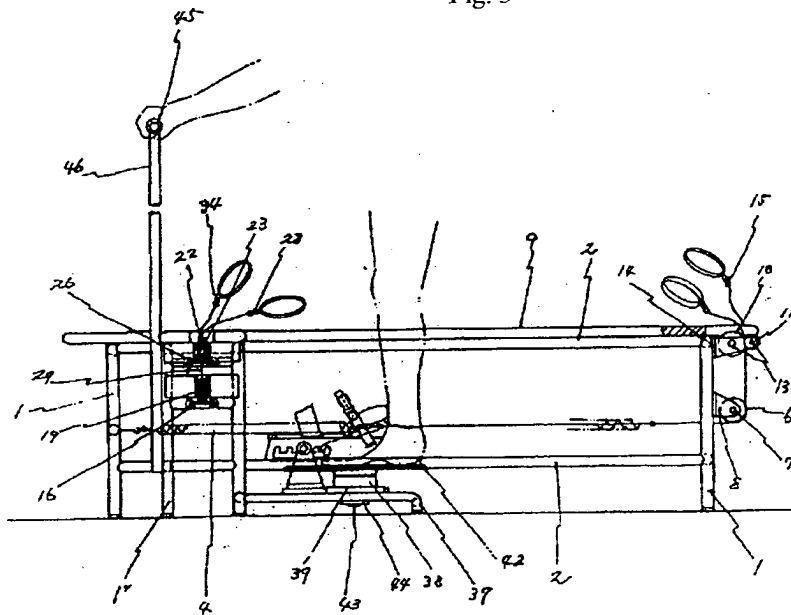


Fig. 4

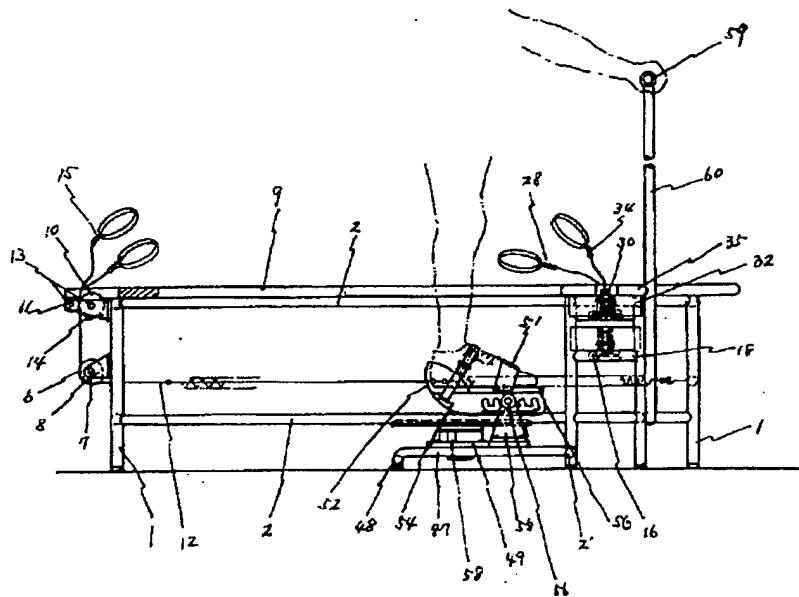


Fig. 5

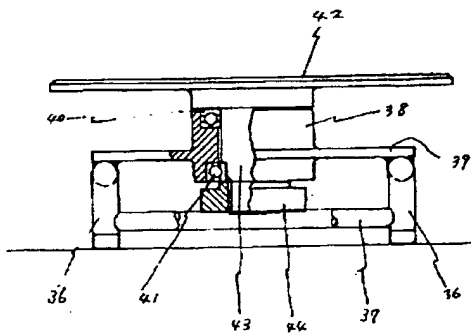


Fig. 6

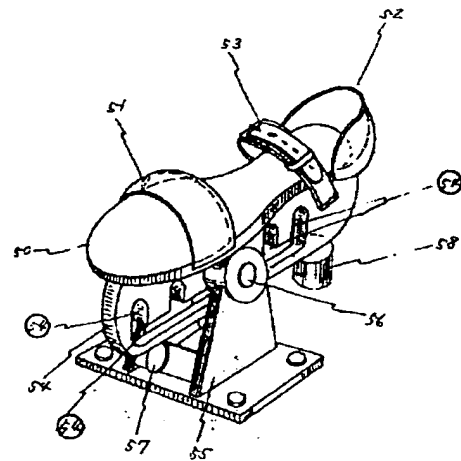


Fig. 7

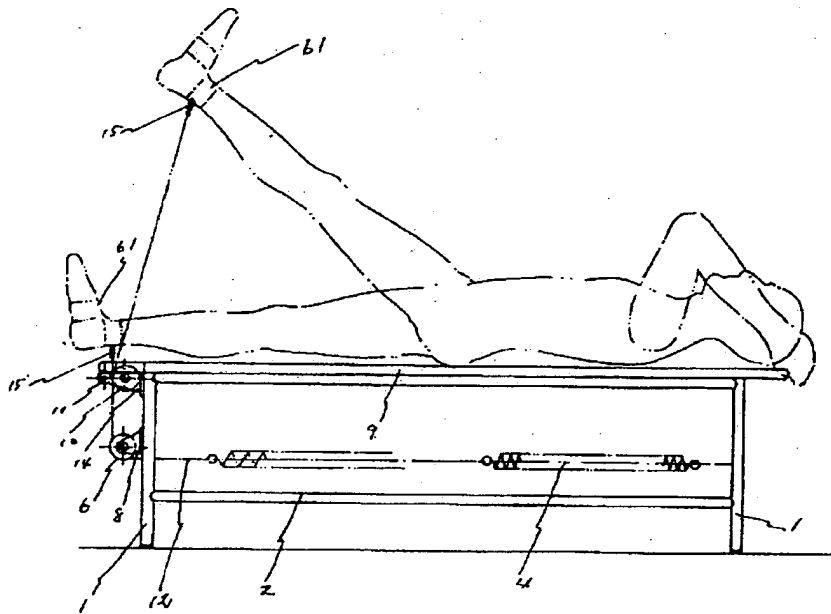


Fig. 8

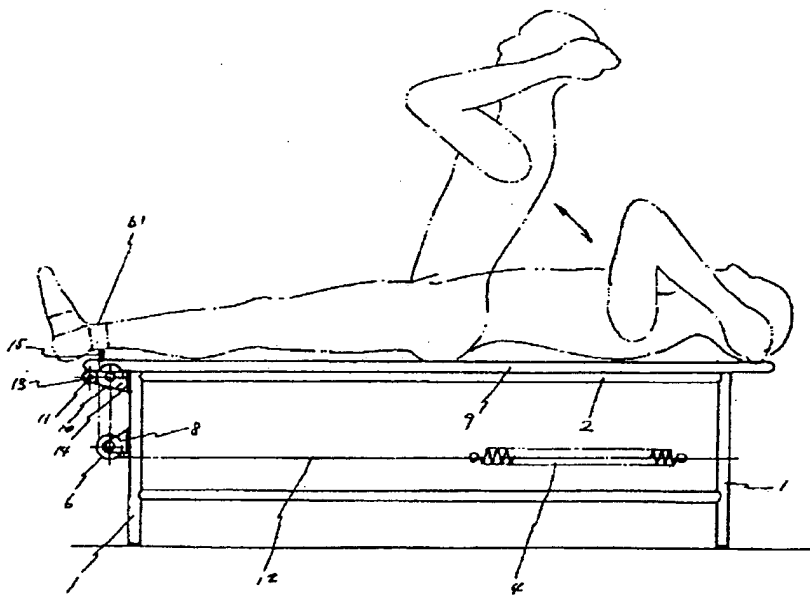


Fig. 9

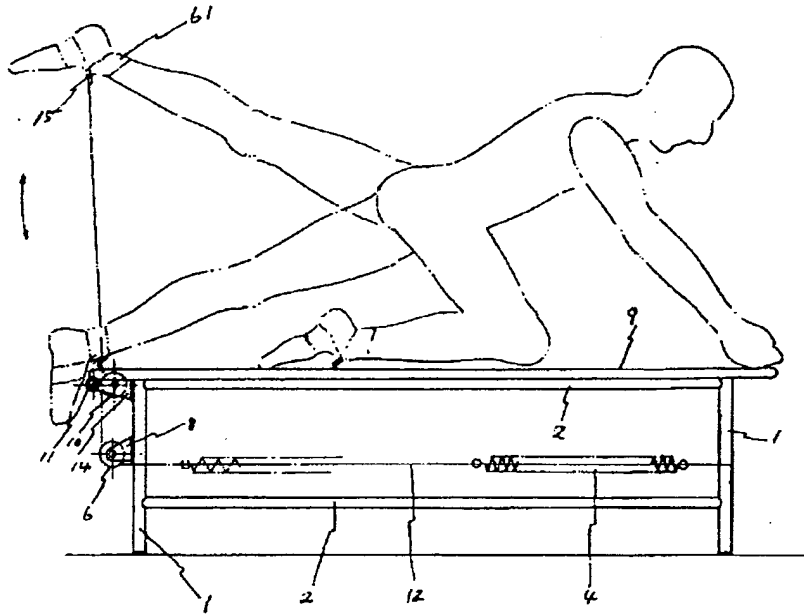


Fig. 10

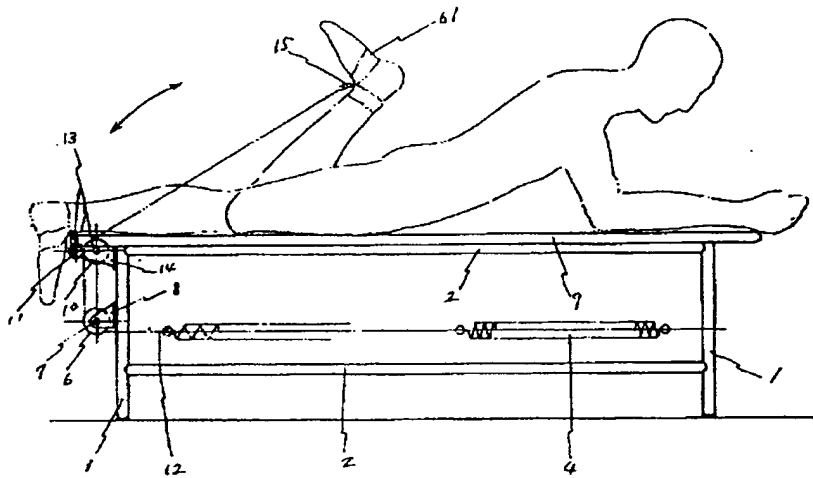


Fig. 13

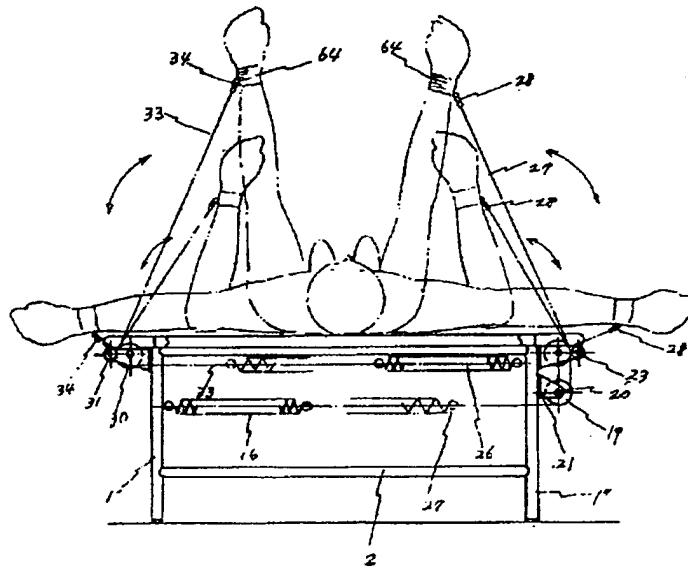
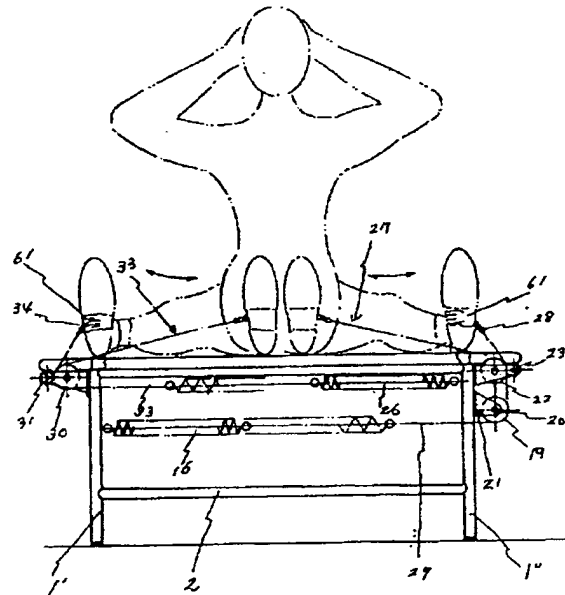


Fig. 14



⑨ 日本國特許庁 (JP)

⑩ 特許出願公開

⑫ 公開特許公報 (A)

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⑭ 自力鍛練強化の総合装置

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明 細 書

1. 発明の名称

自力鍛練強化の総合装置。

2. 特許請求の範囲

装置と模型を組合せて一体形としたベット(1)の下部に夫々複数本のエキスパンダー(4)(4)を離脱自在に併置設置する鍛練強化器において脚部(1)の上方部の上下にブラケット板(2)(2)を固着して消車(3)(3)を夫々軸着し、更に上部ブラケット板(2)には補助消車(3)を軸着して連結紐を挿入して介する紐の端部にはバンドを取付ける取り掛金具を夫々有し、ベット(1)と、横共に同一方式の装置を備えて縦横のエキスパンダーを別々に作用せしめ、又模型ベットの左右の足元に夫々別個構のツイスター及び足首鍛練器等を配備し、個々に順次使用する事により全身の鍛練強化を成し得ることを特徴として成る自力鍛練強化の総合装置。

(1)

3. 発明の詳細な説明

本発明は装置と模型を組合せて一体形とした十字型ベットの正面側床の下脚部に公知エキスパンダーの一端を併置せしめ、その他端に連結紐の一端の結着せしめ、十字型ベット裏面側の脚部に設けた消車を介し、その直上端ベット並に設けた消車の間に連結紐を通し紐の端にはベットを掛ける金具を有し、ベット両側面の床板の下脚に公知のエキスパンダーの一端を夫々に併置せしめ、このエキスパンダーの夫々の他方端に連結紐を軸着しこの紐の他端をベット(1)の夫々の直上端部に設けた二個の消車の間と一方の床の二箇消車の下に夫々の連結紐の端のエキスパンダーが交差しない様に一箇の消車を設けこれ等を夫々介して紐端にベルトを掛ける金具を軸着し、この金具に足、手、首等の夫々のベルト掛け側のエキスパンダーの延び縮みの力を利用してする複合鍛練機の模型ベットすなわち

(2)

補床の下脚部に腰部を跨り腰部下の筋肉、関節等を鍛練するためのフイスターと、足首の関節、筋肉、腱等の鍛練をするための既に出願済の特願昭 53 年第 179159 号の足首鍛練強化器を組合せ全身の筋肉、関節及び腱等の鍛練強化を計り全身失格を防げるものとして用いる事の出来る自力鍛練強化の組合装置に関するものである。然らば本発明の構成並びに実施態様について図をもつて詳しく説明すると次の通りである。

パイプ脚(1)とパイプ横杆(2)で連結組立して十字型基台を形成し、正面側の脚の高位置に横杆(2)を取付け、この横杆には公知の両長のエキスパンダー(4)をもつて適宜の間隔で二組脱着自在なるフック(5)を取付け、ベツト裏面側の脚(1)に上記フックと同間隔で左右に二箇の滑車(6)を夫々にピン(7)着したブラケット板(8)を適宜の高さに取付け、その夫々の滑車(6)間の垂直上部で床(9)の

(4)

に滑車(6)をピン(7)着したブラケット板(8)を定着し、その滑車(6)の垂直上部に主滑車(10)と補助滑車(11)とを組合せたブラケット板(8)を固着し、左側脚部のフック(5)にエキスパンダー(4)の一端を掛懸し、他端は連結紐(12)を結着して滑車(6)を介し上記主滑車(10)と補助滑車(11)とのシーブ溝(13)を通して、バンド取付金具(14)を取付けこの上に適宜に切込んだ板(15)を脚部の基台上に固着して左袖部を形成し、左袖部は左袖基台パイプ脚(1)にフック(5)を中間部に固着せしめた横杆(2)を適宜の位置に取付け、主滑車(10)と補助滑車(11)とを組合せたブラケット(8)を左袖部脚(1)に取付けフック(5)にエキスパンダー(4)を掛懸し連結紐(12)を結着して二つの主滑車(10)と補助滑車(11)のシーブ溝(13)を通してバンド取付金具(14)を結着し、板(15)を右側の基台上に着して横方向の鍛練部を構成し、右側後方袖基台脚(1)の下側横杆(2)にフックパイプ(16)を二本平行且つ水平に横架横杆(2)で

(5)

特開昭55-148571(2)

直下に主滑車(10)と補助滑車(11)との二つで連結紐(12)が作動した際この紐(12)が滑車(6)のシーブ溝(13)から外れない様にし、二つの滑車(6)の外周部を合せた状態になる様に左右夫々のブラケット(8)にピン(7)着したブラケット板(8)を固着してこの左右滑車(6)の間隔と同間隔に適宜に切込んだ矩形の床(9)を基台上に固着し、上記二つのフック(5)に夫々にエキスパンダー(4)の一端を掛懸し他方端に適宜の長さの連結紐(12)を結着し、この紐(12)の他端は滑車(6)を介して主滑車(10)と補助滑車(11)の間を通してその端部にはバンド取付金具(14)を結着し、この金具には各種バンドを取付けて、横方向の鍛練部を構成する。又両側面の適宜の位置に出さしめた袖部の基台脚の左側袖部の脚(1)に前記横方向の鍛練部の二組のエキスパンダー(4)及び連結紐(12)と交差しない様に適宜の位置にエキスパンダー(4)を掛懸するフック(5)を中央に着した横杆(2)を連結着し、右側脚(1)の間

(6)

もつて適宜間隔で連結しこの平行 型パイプ(16)上に中心部に要型軸受(17)を有する蓋台板(18)を固着し、上記軸受の上側にスラストベアリング(19)を下側にラジアルベアリング(20)を嵌挿合し、これに上部方向より回転円板載台脚(21)の中心軸(22)を挿嵌合し下方より軸端部に回転自在なる様にナット(23)を螺着し、右側前方袖基台脚(1)の上下横杆(2)の適宜の位置に握り管(24)丁字型ハンドル(25)の左右に嵌挿着した丁字型ハンドルレバー(26)を固定組立着せしめてフイスター部を構成し、又左側後方袖基台脚(1)の下側横杆(2)に左側フイスター部と同様に二本のフックパイプ(16)を固着し、パイプ横杆(2)で連結し、平行フックパイプ(16)上に蓋台板(18)を固定し、四個一対の足載台(27)の上面前部夫々の左右両側に跨つて昇ベルト(28)を定着し、後部に止付(29)を立設し、更に中間部に足昇紐付ベルト(30)を脱着自在に装着し、左右夫々の足載台(27)の底部には前方から後方にかけて中央部

(8)

に補強板の前方から後方にかけて長溝を設け、この溝より上方に垂直に適宜に複数個の切込溝を設けて軸受とし、この溝に相当の高さの軸をもつたブラケットを定着し、ブラケット上部に貫設した孔内に支軸軸を嵌着して該支軸軸上を滑動、回動自在に作動するよう並置し、上記ブラケットの両部適宜の位置に爪先部の動きを規制するストッパーを固着し、基台板の上に左右足置き部を夫々適宜の間隔で平行に備えて載置固定し、足置き後下方の動きを規制するストッパーを夫々基台板の上に固定し、フリスト部と同様に握り管軸を有する丁字型ハンドルレバーを立設して足首鍛練強化部部を構成する。これら腕、横方向二つの鍛練部とフリスト部足首鍛練部とで全身の鍛練強化が出来る総合鍛練強化装置である。

実施例

縦方向鍛練部の用法について述べると鍛練者は

(7)

取付金具を掛け四つんばいポーズで片脚を後に向け上げる。反対脚も後に向けることにより脚腰、臀部の鍛練をするものである。

鍛練(8)はうつ伏で腹ばいになり両膝と足首を反復して曲げる事により大腿部の裏筋を鍛練するものでももの裏筋をひきしめるものである。鍛練(9)は左右二つのバンド取付金具に延長紐軸を有する首バンド軸を掛け体を前に曲げ首の後にバンドを掛け腕を延ばすことにより反復により首、背、腹筋の鍛練が出来るものでねこぞの予防するものである。

鍛練(10)は仰向けで頭を滑車側に位置して二つの手首バンド軸をバンド取付金具に取付け腕を上方に延して上方の前側に反復持ち上げる事により腕、胸、肩部の鍛練を行い、腕と肩をほそく腕をふくよかにするものである。

次に横方向の鍛練部は足首バンドを左右に着し鍛練(11)は床の上に座して脚を閉きバンド取付金具

(8)

特開昭55-148571(3)

両足首バンド軸を被着して夫々にバンドをバンド取付金具に掛けて鍛練を開始するが、以下本発明総合装置にかける横筋による鍛練の仕方について述べる。

鍛練(12)は床に仰向きに寝転び床の頭上部分を両手で握り両脚を同時又は交互に上下に足をあげかろしの反復鍛練することにより、下腹部、足の筋力、持久力をつけ鍛練強化するもので下腹部、脚のせい肉をとり足の老化を予防するものである。

鍛練(13)は仰向き状態で両足を床に付けたままで両手を頭の後に組み腰を伸ばして体を少し後に倒すこの状態で腰、背筋の鍛練を為すものでウエストを細く背すじを伸すものである。

鍛練(14)は仰向けで手を頭の下に肘をよせながら首と肩を起す、又上体を起すことにより腰、肩、首、腹部の鍛練を行う。

鍛練(15)は足首バンドの位置を前側にし、バンド

(9)

に掛けて脚を閉じたり開いたりして反復動作をする事により臀部、内大腿部の筋力の鍛練を行うことが出来る。

鍛練(16)は仰向きに後で両手を握き両手首バンドをバンド取付金具に掛けて腕を延したままで上前方向に引上げる動作を反復することにより肩関節部、胸部の鍛練を行い、胸部、側部の鍛練を行うものである。

鍛練(17)は肘頭部より曲げ前胸部のみ上前方向に引上げる事により前腕上腕筋部を鍛練を行うものである。

鍛練(18)円板軌台上に立ち丁字型ハンドルレバーの握り管を握りウエストをねじり、内臓の働きをよくしたり、足腰の鍛練を行うものでおなかのまわりの筋肉をひきしめるものである。

鍛練(19)は足置き台上に足を定着せしめた後、丁字型ハンドルレバーの握管を握り体勢を変えて軸受を中心にして、ソーソー式に爪先で同時又は

(10)

位を图示したものである。

左右交互に立つ様に爪先を下げ又踵を下けると
との踵の上下反復運動により足首の関節、筋肉、
腱等の鍛錬を行うもので足首、ふくらはぎをひ
きしめるものである。

この機に一台の鍛錬器により手、胸、腹、腰、
背、肩、首の全身各部の筋肉、関節、腱等の各
方向よりの鍛錬が出来ると共に全身美容効果を
有するので、鍛錬者への筋肉、関節、腱等への
鍛錬負荷はエキスパンダーのスプリング金によ
り簡単に女性にも調整出来負荷荷重として用い
るエキスパンダーは脱着自在なるために本来の
使用も出来極めて多大効果のあるものである。

図面の簡単な説明

第1図は本発明の組合鍛錬機の平面図で、第2
図はその正面図で、第3図はその右側面図で、
第4図はその左側面図である。第5図は右側面
のツイスト部拡大図で、第6図は左側面の足首
鍛錬部の斜視図で、第7図～第14図は鍛錬機

00

- 17 ----- フック
- 18 ----- 横杆
- 19 ----- 滑車
- 20 ----- ビン
- 21 ----- フラケット板
- 22 ----- 主滑車
- 22' ----- シーブ溝
- 23 ----- 補助滑車
- 24 ----- 横ブラケット板
- 25 ----- フック
- 26 ----- 横エキスパンダー
- 27 ----- 盤
- 28 ----- バンド取付金具
- 29 ----- 袖板
- 30 ----- 主滑車
- 30' ----- シーブ溝
- 31 ----- 補助滑車
- 32 ----- フラケット板

00

- 1, 1' ----- バイブ脚
- 2, 2' ----- 横杆
- 3 ----- 横杆
- 4 ----- 横エキスパンダー
- 5 ----- フック
- 6 ----- 滑車
- 7 ----- ビン
- 8 ----- 横ブラケット板
- 9 ----- 縦板
- 10 ----- 主滑車
- 10' ----- シーブ溝
- 11 ----- 補助滑車
- 12 ----- 盤
- 13 ----- ビン
- 14 ----- フラケット板
- 15 ----- バンド取付金具
- 16 ----- 横エキスパンダー

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- 33 ----- 盤
- 34 ----- バンド取付金具
- 35 ----- 袖板
- 36 ----- 縦バイブ
- 37 ----- 横補強杆
- 38 ----- 縦面軸受
- 39 ----- 基台板
- 40 ----- スラストベアリング
- 41 ----- ラジアルベアリング
- 42 ----- 回転円板取台
- 43 ----- 中心軸
- 44 ----- ナット
- 45 ----- 送り管
- 46 ----- 丁字型ハンドルレバー
- 47 ----- 縦バイブ
- 48 ----- 横補強杆
- 49 ----- 基台板
- 50 ----- 足取台

00

- 51 ----- 脚ベルト
- 52 ----- 阻止棒
- 53 ----- 足踵部付ベルト
- 54 ----- 増強板
- 55 ----- 長溝
- 56 ----- 切込溝
- 57 ----- ブラケット
- 58 ----- ピン
- 59 ----- ストッパー
- 60 ----- ストッパー
- 61 ----- 廻り管
- 62 ----- 丁字型ハンドルレバー
- 63 ----- 足首バンド
- 64 ----- 延長板
- 65 ----- 首バンド
- 66 ----- 手首バンド

出願人 小 川

代理人 秀 島 通 雄

特



特

図 1

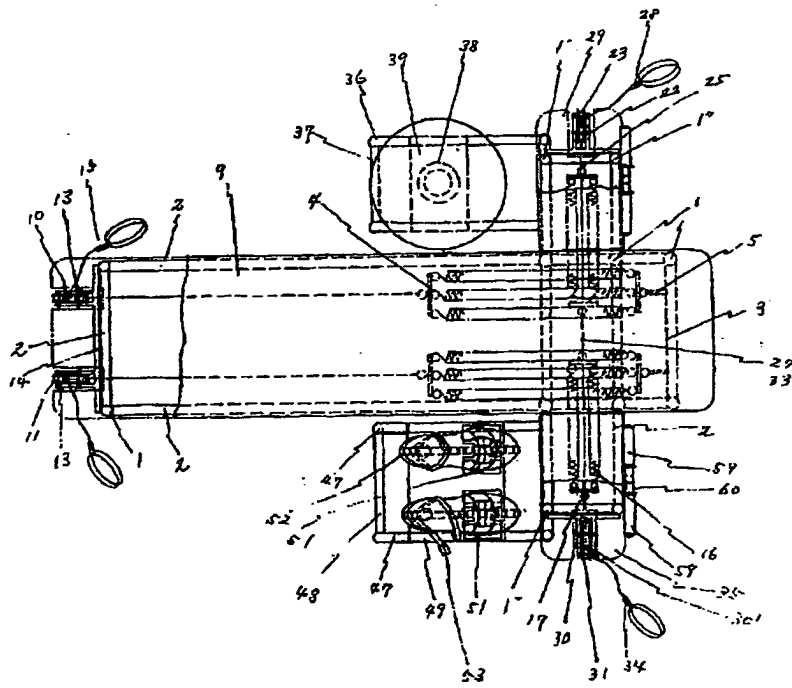


図2

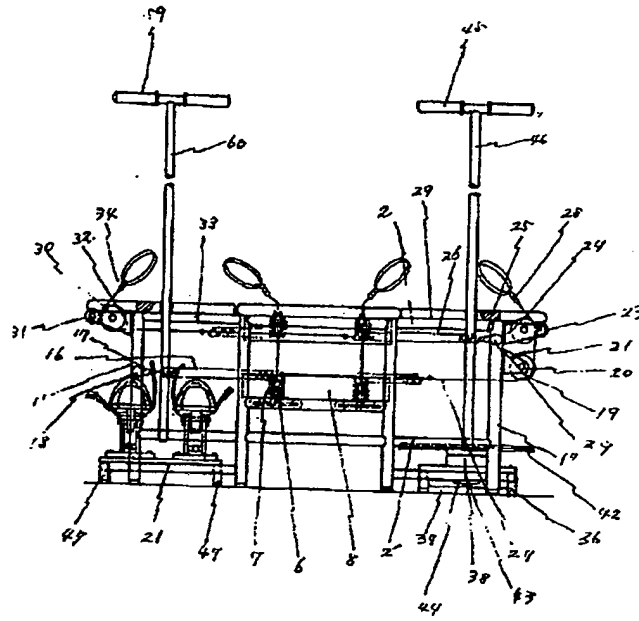


図3

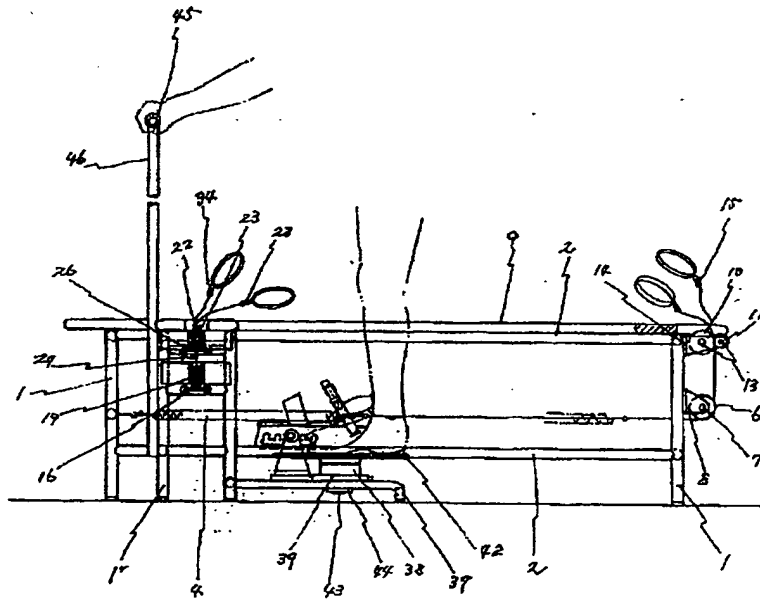


図4

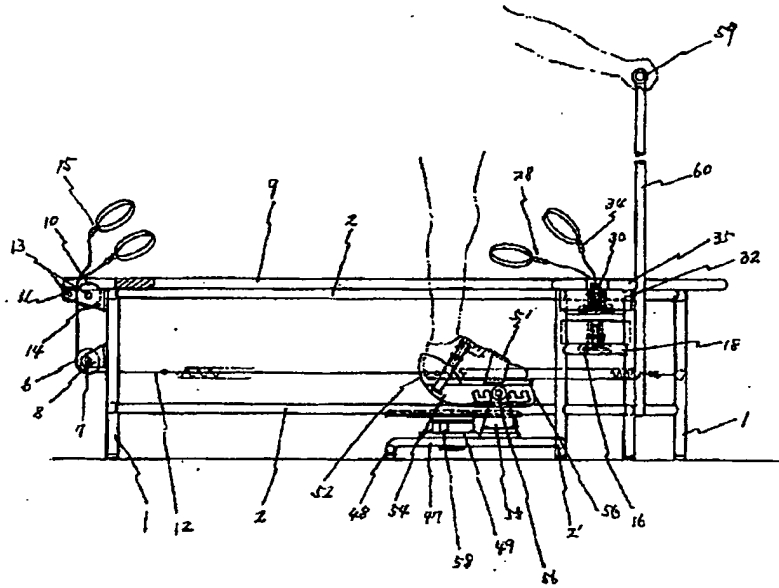


図9

図5

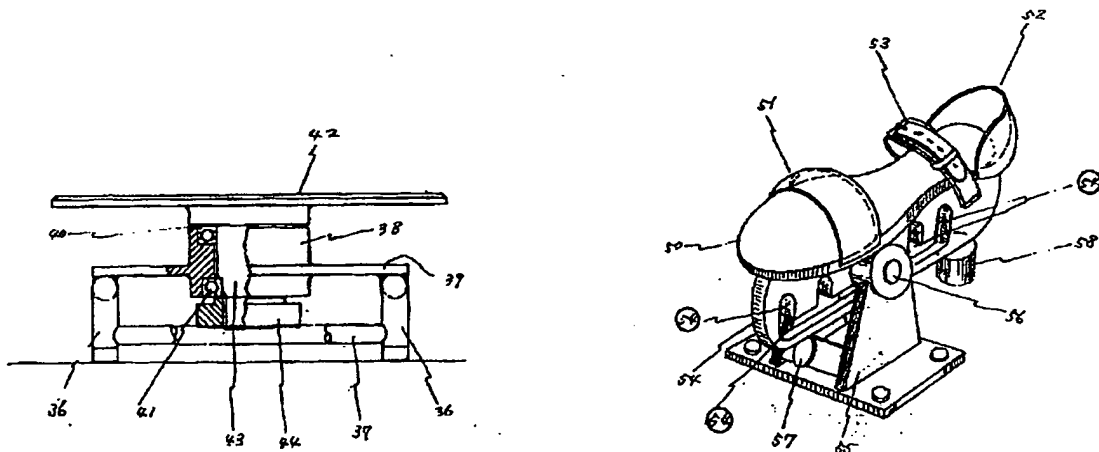


図7

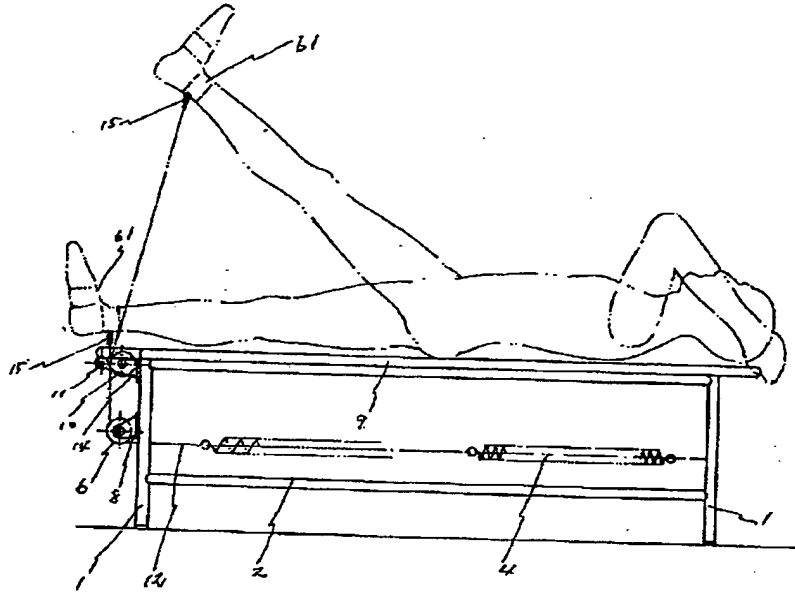


図8

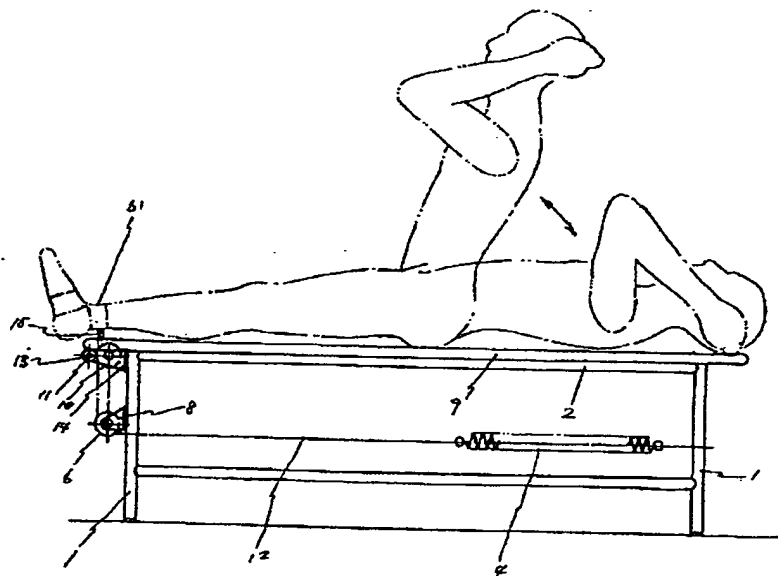


図9

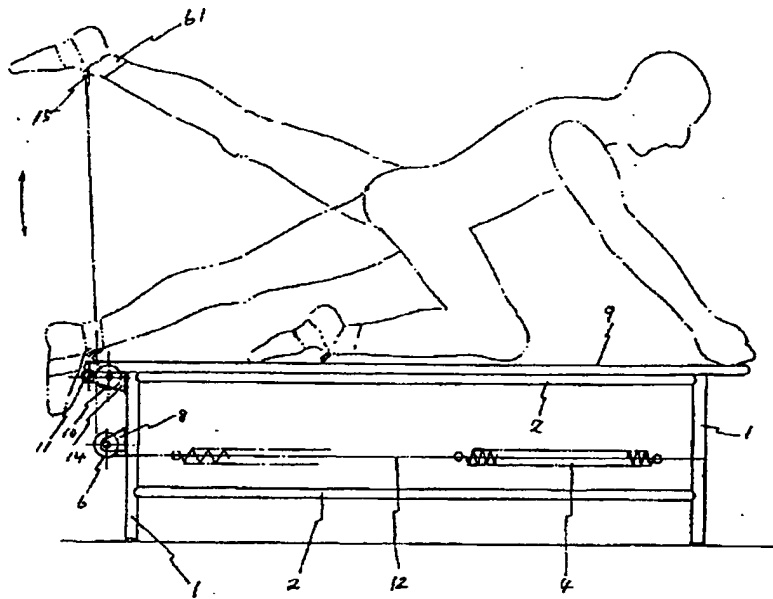


図10

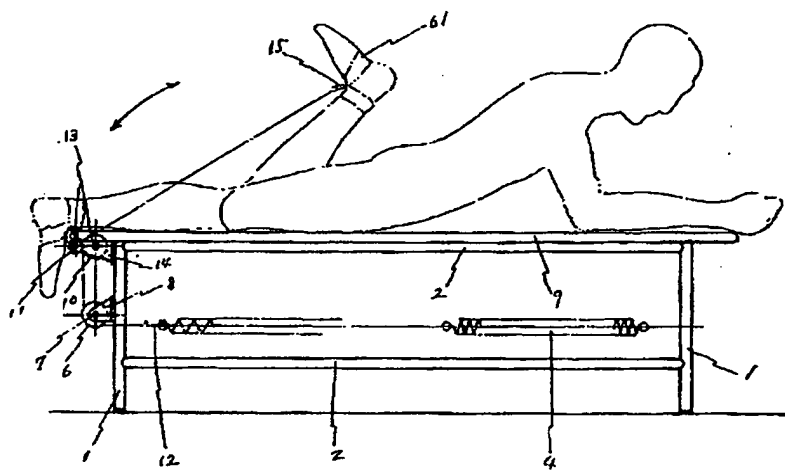


図11

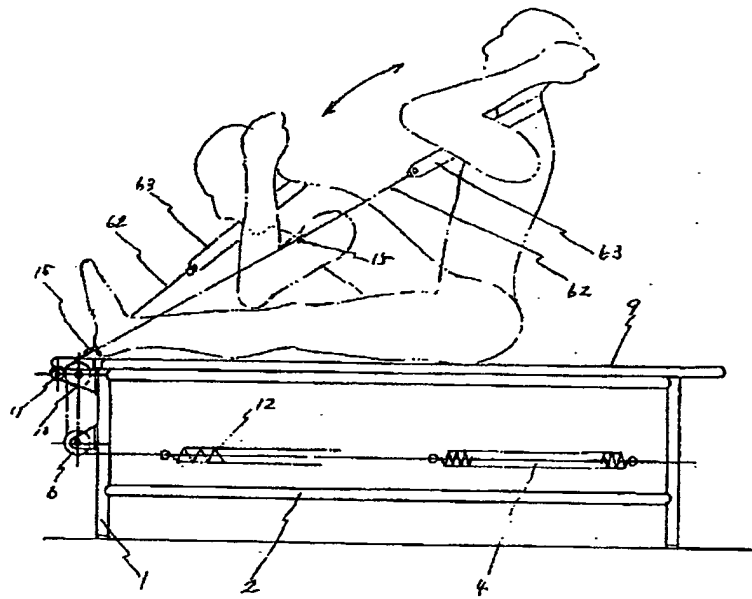


図12

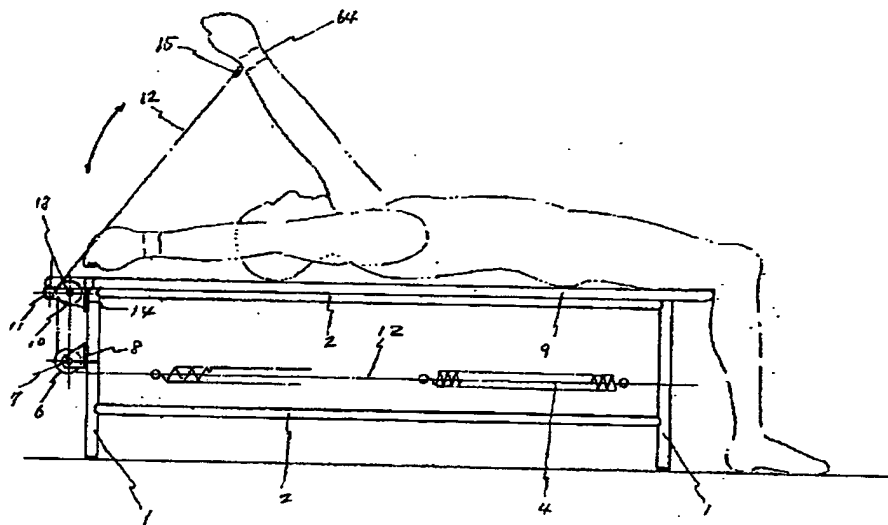


図13

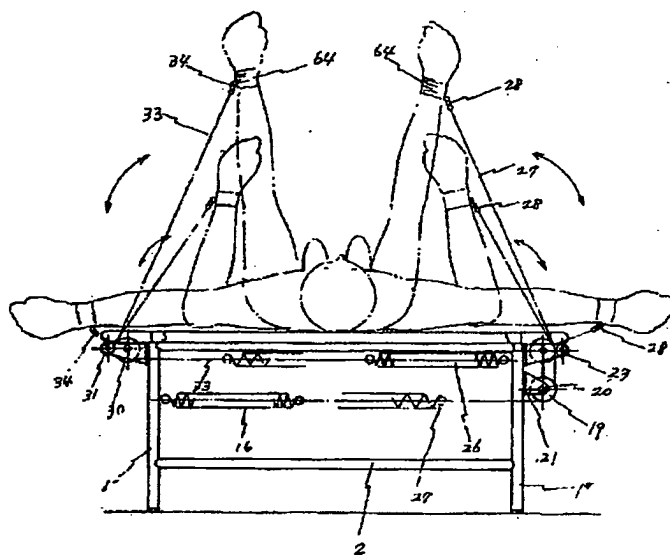
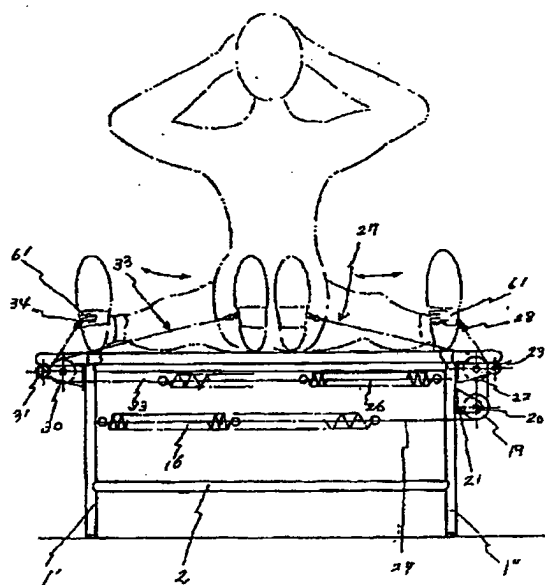


図14



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